

TWO SPECIES OF *LAGENOPHRYS* FROM SAPPORO

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TWO FIGURES

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There has been no record on the ciliate *Lagenophrys* in Japan. Recently the author collected the following two species of *Lagenophrys* in the vicinity of Sapporo: *Lagenophrys ampulla* Stein from *Gammarus annandalei*, and a new form from the shrimp, *Leander paucidens*. They were fixed in picro-acetic-acid, sublimate-alcohol, and Gilson's solution, the latter being the best for sectioning the house. Animals were sectioned in 6-12 μ with the host tissue in paraffin and stained with Heidenhain's and Delafield's Haematoxylin. The author wishes to express his hearty thanks to Prof. Tohru Uchida, under whose guidance the work has been carried out. He is also grateful to Mr. I. Kubo of the Fishery Institute of Tokyo for the identification of the shrimp.

Lagenophrys ampulla Stein

Fig. 1

L. ampulla: Stein, 1852, pp. 505-506, Pl. 18, Figs. 22-23; Plate, 1886, pp. 211-215, Pl. 7, Figs. 31-38; Wallengren, 1900, pp. 358-363, text-fig. 1; Ubisch, 1913, pp. 39-77, text-fig. 9; Pénard, 1922; Swarczewsky, 1930, pp. 464-467, Pl. 22, figs. 1-5.

House almost round in dorsal view, transparent and colourless and without special structure. In side view dorsal side convex and ventral side smoothly convex. Mouth part composed of five plates, of which the anterior two are longer than the posterior three. The anterior plates are always observable and located in close contact with each other. The posterior ones are seen only in well-developed individuals and spindle-like in forms and distinctly separated from one another. Just marginal to the mouth there exists a crescent fold which can be seen in Fig. 1, a & b. Between the fold and the anterior lip a deep furrow is observable (Fig. 1, c). The wall of the house just posterior



Fig. 1. *Lagenophrys ampulla* Stein. a, Dorsal view. $\times 555$;
b, Dorsal view of mouth plates and thickened fold. $\times 1600$;
c, Longitudinal section of house. $\times 900$.

to the posterior lip is slightly elevated.

Soft body pot-shaped. Macronucleus situated in the center of the body, horseshoe-shaped, with widened ends. Micronucleus elliptical, usually concealed in the macronucleus and often not observable. The measurements of the species give:

House length	59—63 μ
House breadth	67—69 μ
House height	28—30 μ
Length of mouth split	18—19 μ
Diameter of micronucleus	2.2 \times 2.7 μ .

Lagenophrys ampulla is commonly found attached to the gills and maxillipedes of *Gammarus annandalei* in brooks in Sapporo from May to July.

Distribution: Europe; Germany and Siberia; Lake Baikal.

Remarks: The species was first recorded by Stein (1852) from Niemeck, Germany, on gills and epimerial plates of *Gammarus pulex*. Subsequently Plate (1886), Wallengren (1900), Ubisch (1913) and Pénard (1922) described the species from the same host. Swarczewsky (1930) reported the species from 48 species of Gammaridae from Lake Baikal. *G. annandalei* has not been recorded as the host of the ciliate. The specimens from Sapporo are somewhat different from the description given by Wallengren in the feature of the mouth plates.

Lagenophrys lunatus n. sp.

Fig. 2

House round in dorsal view, colourless, transparent and without

special structure. In side view dorsal surface convex and ventral surface nearly even. Mouth plates four, two anterior and two posterior. These plates are curved roundly, and the anterior and the posterior ones are connected by hinges. All these plates can be always noticed distinctly. The form of lips is indicated in Fig. 2, c.

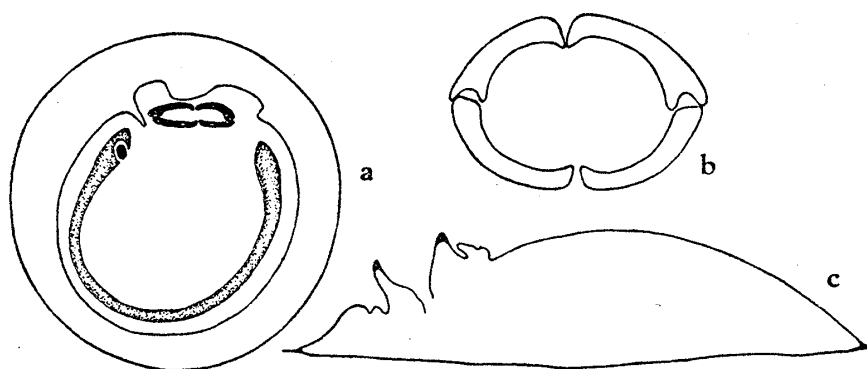


Fig. 2. *Lagenophrys lunatus* n. sp. a, Dorsal view. $\times 555$;
b, Dorsal view of mouth plates. $\times 1600$;
c, Longitudinal section of house. $\times 900$.

The posterior lip is larger than the anterior one, and terminal ridges of both the lips are distinctly thickened, forming the mouth plates. In the anterior and posterior parts of the mouth there can be seen foldings of house.

The soft body is pot-like, usually asymmetrical, and the anterior margin is bilobed. Macronucleus horseshoe-shaped, slender, very long, and usually set along the periphery of the soft body; it is often slightly thickened at both ends somewhat like snake's heads. Micronucleus elliptical, usually lying in the quay wall of macronucleus and often not observable. The measurements of the species give:

House length	62—66 μ
House breadth	60—67 μ
House height	17—20 μ
Length of mouth split	14—16 μ
Diameter of micronucleus	1.6 \times 2.5 μ .

The species is found in great numbers covering nearly the whole surface—the carapace, terga, maxillipeds, pleopods, basal part of antenna, eyestalks and telson of the shrimp *Leander paucidens* which is quite common in the vicinity of Sapporo.

Remarks: The present species is characterized by having a very long and slender macronucleus situated along the margin of the body,

and four distinct mouth plates on the terminal edges of lips. These features are distinctly different from those found in the species already recorded, and warrant the establishment of a new species. The shrimp *Leander* has never been recorded as the host of *Lagenophrys*.

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